

WHAT IS CLAIMED IS:

1. An air conditioner for a vehicle, which air conditions a vehicle interior by a refrigerating cycle formed to include a compressor and an evaporator, said air conditioner for a vehicle comprising a water cooling cycle which is formed by water refrigerant heat exchange means provided in the refrigerating cycle and cooling water which is supplied as a refrigerant, heat storage means for cooling in which one of water cooled by said water-refrigerant heat exchange means and cooling heat obtained from water is stored, and heat dissipation means for cooling which cools air to be blown out into the vehicle interior by water supplied as a refrigerant from said heat storage means for cooling.

2. An air conditioner for a vehicle according to claim 1, comprising a water heating cycle which is formed by heat storage means for heating in which one of water heated by an engine and heating heat obtained from water is stored, and heat dissipation means for heating, which heats air to be blown out into the vehicle interior by supplying, as a refrigerant, one of cooling water for the engine and water heated by heat stored in said heat storage means for heating so as to allow heating of the vehicle interior.

3. An air conditioner for a vehicle according to claim 2, comprising: heat storage means which can be used as both the heat storage means for cooling and also as the heat storage means for heating; first circulating means which can circulate water which becomes a refrigerant between the engine and said heat dissipation means for heating; second circulating means which can circulate water which becomes a refrigerant between said water-refrigerant heat exchange means and said heat dissipation means for cooling; and circulating passage switching means which changes said heat storage means to said first circulating means and said second circulating means to allow circulation of the water by any one of said first circulating means and said second circulating means.

4. An air conditioner for a vehicle, which is provided in a vehicle equipped with an engine and an electric motor and which air conditions a vehicle interior by a refrigerating cycle formed to include a compressor and an evaporator, said air conditioner for a vehicle comprising: driving shafts provided respectively in the engine and in the electric motor; an output shaft connected to said driving shafts of the engine and the electric motor and rotated synchronously with a driving source which is one of the engine and the electric motor; driving force transmitting means which connects a driving shaft of one of the engine and the electric motor and a driving shaft of the compressor so as to

transmit a driving force of said output shaft to the compressor; and driving force switching means which switches a driving source of the driving force to be transmitted to the driving shaft of the compressor by said driving force transmitting means.

5. An air conditioner for a vehicle according to claim 4, wherein said driving force switching means is clutch means provided between the driving shafts of the engine and the electric motor and said output shaft.

6. An air conditioner for a vehicle according to claim 4, comprising: first driving force transmitting means, which is provided as said driving force transmitting means, for transmitting driving force from the driving shaft of the engine to the driving shaft of the compressor; second driving force transmitting means which transmits driving force from the driving shaft of the electric motor to the driving shaft of the compressor; and clutch means which is provided as said driving force switching means and separates one of said first driving force transmitting means and said second driving force transmitting means from the driving shaft of the compressor.

7. An air conditioner for a vehicle, which is provided in a vehicle equipped with an engine and an electric motor and which air conditions a vehicle interior by a refrigerating cycle formed to

include a compressor and an evaporator, said air conditioner for a vehicle comprising: driving shafts provided respectively in the engine and in the electric motor; an output shaft connected to said driving shafts of the engine and the electric motor and rotated synchronously with a driving source which is one of the engine and the electric motor; load reduction means for reducing the driving load of said output shaft which rotates integrally with the driving shaft of the engine when the electric motor is driven; and driving force transmitting means which connects said output shaft and the driving shaft of the compressor to transmit the driving force of said output shaft to the compressor.

8. An air conditioner for a vehicle, which is provided in a vehicle equipped with an engine and an electric motor and which air conditions a vehicle interior by a refrigerating cycle formed to include a compressor and an evaporator, said air conditioner for a vehicle comprising: an auxiliary-machine motor which drives a plurality of auxiliary machines provided in the vehicle; third driving force transmitting means which can transmit the driving force of the engine and the driving force of said auxiliary-machine motor to the plurality of auxiliary machines and also to the driving shaft of the compressor; driving force interrupting means which interrupts the driving shaft of the engine and said third driving force transmitting means; and control means which controls said driving force interrupting means and said

auxiliary-machine motor in accordance with a state in which the engine is driven.